

ABSTRACT

Disclosed is a current sample image acquisition unit for acquiring a current sample image, obtained by sampling a current input image provided by an image source; a previous sample image acquisition unit for acquiring a previous sample image, obtained by sampling a previous input image provided by the image source; a motion detector for detecting a moving pixel and a still pixel through comparison between corresponding pixels within the current and previous sample images; a region splitting unit for splitting the current sample image into a plurality of search regions and generating a representative value of the moving pixel in each search region using information about the moving pixel detected by the motion detector; a depth map generator for determining a moving pixel group constructing an object moving in each search region using the representative value of each search region and setting a small weight value for the moving pixel group, to generate a depth map image having the resolution of the original input image; and a positive parallax processor for generating a left-eye image and a right-eye image such that the depth map image is displayed on the display in such a manner that the moving pixel group is located before the screen of the display and remaining pixel groups are arranged behind the screen.